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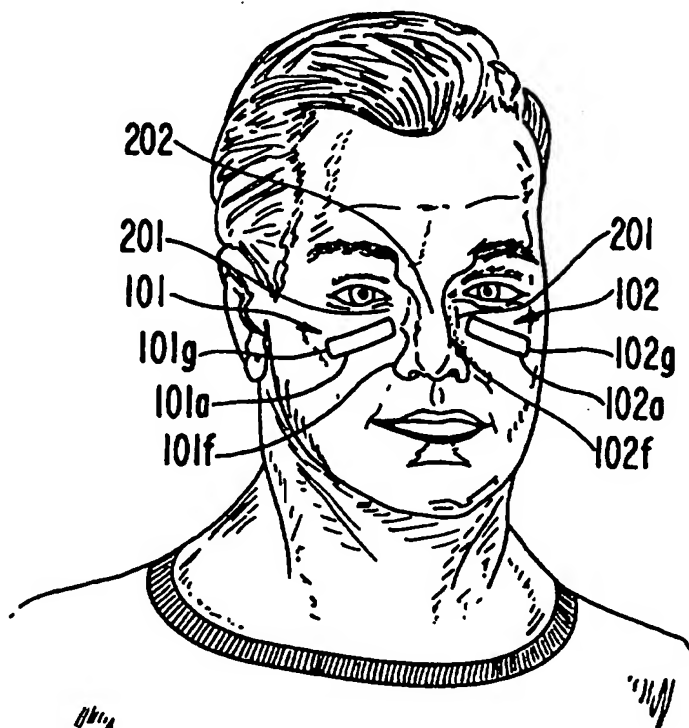
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(54) Title: ARTICLE AND METHOD FOR DILATING RESPIRATORY PASSAGES

(57) Abstract

In order to dilate nasal passages and to increase the ease with which respiration may be carried out through the nose, tape members (101, 102) are stretched and adhered to the wearer's face below the eyes for dilating nasal concha.



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ARTICLE AND METHOD FOR DILATING RESPIRATORY PASSAGESBACKGROUND OF THE INVENTIONField of the Invention

5 The present invention related to an article
which can be applied to the face of a user to
facilitate respiratory activity. More specifically,
the present invention relates to an article in form of
a tape which can be applied to the face of a user on
10 either side of the user's nose in a manner which opens
the nasal concha and therefore reduces nasal air flow
restriction and promotes easier breathing. Still more
particularly, this invention relates to a method of
facilitating respiratory activity.

15

Description of the Related Art

Fig. 1 shows an article 10 which can be
applied to the nose in the illustrated manner and which
is arranged to gently pull the nostril passages 12 open
20 to dilate them. The article 10 is said to improve the
ease with which the wearer can breathe through his or
her nose. While this article exhibits certain merits
such as being applicable to both athletes and persons
who have difficulty breathing at night, it is only able
25 to open the nostril passages. This arrangement is
further such that it encounters the drawback that it
can possibly interfere with the wearing of sunglasses,
goggles or the like such as worn during ski competi-
tions and the like. Accordingly, it remains an
30 objective to improve upon the article 10 as will be

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seen from a review of this written description of the invention taken with the accompanying drawings.

SUMMARY OF THE INVENTION

5 It is an object of the present invention to provide an article which can be applied to the face of a user in a manner which reduces respiratory restriction and therefore eases breathing.

10 It is a further object of the invention to provide an article which can be applied to the face of a user in a manner which eases breathing through the nose while avoiding any obstacle to a comfortable wearing of goggles, sunglasses and the like.

15 It is a further object of the invention to provide an article which can be used to reduce glare by preventing reflection of light into the wearer's eyes while simultaneously increasing the ease with which breathing through the nose can be effected.

20 It is a further object to provide an article which opens or dilates the nasal concha as different from the nostrils, and which therefore reduces the resistance to air flow and facilitates breathing through the nose.

25 In brief, the above objects are achieved by tape members, preferably two, which are adhered to the wearer's face between a location adjacent the nose just below the medial infra orbital region, and a location just inferior to the zygomatic ridge. The tape members maintain the nasal concha in a dilated state and reduce
30 restriction to air flow.

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More specifically, a first aspect of the invention resides in an article comprising: a pair of dark-colored, non-reflective tapes which can be applied to the face of a user on either side of the nose in a manner which dilates the nasal concha and prevents annoying reflection of glare generating light into the wearer's eyes.

A second aspect of the invention resides in a nasal passage dilating article comprising: a pair tape members which are applied to the face of a user on either side of the nose in a manner which dilates the nasal concha; and glare-attenuating means for preventing annoying reflection of glare-generating light into the wearer's eyes, the glare-attenuating means comprising a dark-colored, non-reflective surface formed on said tape members.

A third aspect of the present invention resides in a method of increasing the ease with which breathing through the nose can be achieved comprising the steps of: adhering a first end of a tape adjacent the nose at a location just below the medial infra orbital region; pulling the tape to pull open and dilate a nasal concha and to establish a tension in the tape; and adhering a second end of the tape to wearer's face at a location just inferior to the zygomatic ridge in a manner which maintains the nasal concha in a dilated state.

A further aspect of the invention resides in the step of attenuating glare by providing the above mentioned tape with a dark colored non-reflective surface.

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BRIEF DESCRIPTION OF THE DRAWINGS

The invention disclosed herein will become better understood as a detailed description is made of the preferred embodiments with reference to the
5 appended drawings in which:

Fig. 1 is a perspective sketch showing the article referred to in the opening paragraphs of this disclosure;

10 Fig. 2A is a perspective sketch showing a person wearing the article according to a first embodiment of the present invention;

Fig. 2B is a perspective partially cut-away view showing a portion of one of the members which constitute the article shown in Fig. 2A;

15 Fig. 3 is a plan view of an underside of an article according to a second embodiment of the present invention;

Fig. 4 is a sectional view showing air passages which exist within the interior of a human
20 skull and which are effected by the present invention and the article shown in Fig. 1; and

Fig. 5 is a perspective sketch showing an embodiment of the invention applied to a wearer's face.

25 **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

Figs. 2A and 2B show an embodiment of the invention. In this embodiment, the article comprises two members 101, 102, one for each side of the wearer's nose. Each of the members 101, 102 comprises a length
30 of tape 101a, 102a which has a layer of adhesive 101b (102b) on the underside 101c (102c) (see Fig. 2B). The

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outer or upper side 101d, 102d of the tape 101a, 102a is preferably a non-reflective matte black or a similar dark color with a non-reflective finish 101e (102e). This allows the lengths of tape 101a, 102a to double as
5 both a respiratory aid as well as a glare attenuation means which provides the same function attributed to the direct application of black coloring to the face.

As shown in Fig. 2A, the inboard ends 101f, 102f of the tapes 101a, 102a are each adhered to the
10 face at a position 201 which is adjacent the nose 202 and just below the medial infra orbital region, while the outboard ends 101g, 102g are each adhered to the face at a location just inferior to the zygomatic ridge. With this disposition and with the above type
15 of application the nasal concha are pulled open and dilated in a manner which notably reduces the resistance to air flow and permits improved breathing through the nose.

While the first embodiment of the invention
20 features a continuous coating of adhesive 101a (102b) on the underside, it is possible in accordance with a second embodiment of the invention to provide adhesive 101b' (102a') only at the end portions of the tape members 101a' (102a') in the manner illustrated in Fig.
25 3.

The effect of the present invention is such that rather than attempting to open the vestibule and limen nasi portions 204, 206 of the nose, the lengths of tape 101a, 102a which characterize the present
30 invention are such as to effect the middle nasal concha 208. These portions are shown in Fig. 4. As will be

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appreciated, the volume of the concha portions of the respiratory passage is much larger than the passages defined by the nostrils (viz., the vestibule and limen portions 204, 206) and has a much larger effect on
5 respiratory ease.

The invention is applied by firstly adhering a first end 101f, 102f of a tape member 101 (102) adjacent the nose 202 at a location 201 just below the medial infra orbital region, and end pulling the tape
10 outwardly to produce a tractive force which pulls open and dilate a nasal concha 208. This, of course, produces a tension in the tape. Following this, while maintaining the tension the second end of the tape 101 is adhered to wearer's face at a location just inferior
15 to the zygomatic ridge in a manner which maintains the nasal concha in a dilated state. A similar operation is performed on the other side of the nose.

As will be appreciated from a comparison of Figs. 1 and 5, the present invention in addition
20 providing a greater improvement in respiratory ease, is such as to avoid placing a layer on the nose which tends to interfere with the wearing of sunglasses, goggles and the like, and/or be partially visible and therefore annoying to the wearer, while simultaneously
25 enabling glare to be attenuated through the use of tape members having the matte black surface 101e (102e).

The adhesive 101b (102b) which is used with the present invention is selected to be hypoallergenic so as to attenuate any possibility of an athletic
30 wearer being caused any allergic reactions and the like type of skin irritation upon prolonged use.

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In order to achieve optimum results for prolonged periods the invention should be applied before the wearer begins to sweat.

5 It will be appreciated that while only two embodiments of the invention have been discussed the various variations and modification which are possible will be self-evident to those skilled in the art to which this invention pertains. The present invention is therefore limited only by the appended claims.

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WHAT IS CLAIMED IS:

- 1 1. A method of increasing the ease with which
2 nasal breathing through a human nose can be improved,
3 comprising the steps of:
4 adhering a first end of a tape member adjacent
5 the nose at a location just below the medial infra
6 orbital region;
7 pulling the tape member to pull open and dilate
8 a nasal concha and to establish a tension in the tape;
9 and
10 adhering a second end of the tape member to a
11 wearer's face at a location just inferior to the
12 zygomatic ridge in a manner which maintains the tension
13 in the tape member and therefore maintains the nasal
14 concha in a dilated state.
- 1 2. A method as set forth in claim 1, further
2 comprising the step of attenuating glare by providing
3 said tape member with a dark colored non-reflective
4 surface.
- 1 3. A method for easing respiratory activity in
2 a human having a nose with nasal passages and a nasal
3 concha, comprising:
4 adhering a first end of a first tape member to
5 the face of a human wearer adjacent said nose at a
6 location just below the medial infra orbital region in a
7 manner which dilates the nasal concha and tensions said
8 first tape member; and
9 adhering a second end of said first tape member
10 to the face of the human wearer at a location just
11 inferior to the zygomatic ridge in a manner which
12 maintains the tension in the first tape member and thus
13 maintains the nasal concha in a dilated state.

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1 4. The method as set forth in claim 3, wherein
2 said first tape member has a length and an adhesive on at
3 least a part of a side thereof, said first tape member
4 being structurally applied by said adhesive to the face
5 of the human wearer.

1 5. The method as set forth in claim 3, wherein
2 said first tape member has a non-reflective surface on a
3 side opposite said adhesive which prevents annoying
4 reflection of glare-generating light into an eye of the
5 wearer.

1 6. The method as set forth in claim 3, further
2 including the additional steps of

3 adhering a first end of a second tape member to
4 the face of a human wearer adjacent said nose at a side
5 of the face opposite that on which the first tape member
6 is applied and at a location just below the medial infra
7 orbital region in a manner which dilates the nasal concha
8 and tensions said second tape member; and

9 adhering a second end of said second tape
10 member to the face of the human wearer at a location just
11 inferior to the zygomatic ridge in a manner which main-
12 tains the tension in the tape and thus maintains the
13 nasal concha in a dilated state.

1 7. The method as set forth in claim 3 wherein,
2 wherein said second tape member has a length and an
3 adhesive on at least a part of a side thereof, said
4 second tape member being structurally applied by said
5 adhesive to the face of the human wearer.

1 8. The method as set forth in claim 7, wherein
2 said second tape member has a non-reflective surface on a
3 side opposite said adhesive which prevents annoying
4 reflection of glare-generating light into an eye of the
5 wearer.

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1 9. The method as set forth in claim 7 wherein
2 each of said first and second tape members has an
3 outboard end structurally adapted to adhere to the face
4 at a location inferior to the zygomatic ridge.

1 10. A method of using an article in combina-
2 tion with a wearer's face defining a nose with nasal
3 passages and a nasal concha, comprising the steps of:
4 providing a pair of tape members each having a
5 length and an adhesive on at least a part of a side
6 thereof,
7 structurally applying each of said tape members
8 respectively to the wearer's face on either side of the
9 nose in a manner which dilates the nasal concha by
10 adhering a first end of each of said tape members at a
11 position adjacent the nose and below the medial infra
12 orbital region such that the nasal concha are opened in a
13 manner which reduces air flow resistance, and adhering a
14 second end of each of said tape members to the face of
15 the wearer at a location inferior to the zygomatic ridge.

1 11. The method as set forth in claim 10
2 wherein said adhesive is provided at substantially an
3 entire surface of each of said tape members.

1 12. The method as set forth in claim 10
2 wherein each of said tape members has a dark colored non-
3 reflective outer surface.

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1 13. An article used in combination with a
2 wearer's face defining a nose with nasal passages and a
3 nasal concha, comprising:
4 a pair of dark colored non-reflective tapes
5 each having a length and an adhesive on at least a part
6 of a side thereof, each of said tapes being structurally
7 applied by said adhesive to the wearer's face on either
8 side of the nose in a manner which dilates the nasal
9 concha, and having a non-reflective surface on a side
10 opposite said adhesive which prevents annoying reflection
11 of glare generating light into the wearer's eyes.

1 14. A nasal passage dilating article used in
2 combination with a wearer's face defining a nose with
3 nasal passages and a nasal concha, comprising:
4 a pair of tape members which are applied to the
5 face on either side of the nose in a manner which dilates
6 the nasal concha; and
7 glare attenuating means for preventing annoying
8 reflection of glare generating light into the wearer's
9 eyes, said glare attenuating means comprising a dark
10 colored non-reflective surface formed said tape members.

1 15. The article as set forth in claim 13,
2 wherein said tapes each have an inner end, the face of
3 the wearer defining a medial infra orbital region, inner
4 ends of each of said tapes being adhered to the face at a
5 position adjacent the nose and below the medial infra
6 orbital region.

1 16. The article as set forth in claim 15,
2 where each of said tapes has an outboard end structurally
3 adapted to adhere to the face at a location inferior to
4 the zygomatic ridge.

1 17. The article as set forth in claim 13
2 wherein said adhesive is provided at substantially an
3 entire surface of each of said tapes.

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1 18. The article as set forth in claim 14,
2 wherein said tapes each have an inner end, the face of
3 the wearer defining a medial infra orbital region, inner
4 ends of each of said tapes being adhered to the face at a
5 position adjacent the nose and below the medial infra
6 orbital region.

1 19. The article as set forth in claim 15,
2 where each of said tapes has an outboard end structurally
3 adapted to adhere to the face at a location inferior to
4 the zygomatic ridge.

1 20. The article as set forth in claim 13
2 wherein said adhesive is provided at substantially an
3 entire surface of each of said tapes.

1 21. An article used in combination with a
2 wearer's face defining a nose with nasal passages and a
3 nasal concha, comprising:

4 a pair of dark colored non-reflective tapes
5 each having a length and an adhesive on at least a part
6 of a side thereof, each of said tapes being structurally
7 applied by said adhesive to the wearer's face on either
8 side of the nose in a manner which dilates the nasal
9 concha, wherein said tapes each have an inner end, the
10 face of the wearer defining a medial infra orbital
11 region, inner ends of each of said tapes being adhered to
12 the face at a position adjacent the nose and below the
13 medial infra orbital region such that the nasal concha
14 are opened in a manner which reduces air flow resistance.

1 22. The article as set forth in claim 21,
2 where each of said tapes has an outboard end structurally
3 adapted to adhere to the face at a location inferior to
4 the zygomatic ridge.

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- 1 23. The article as set forth in claim 21,
- 2 wherein said adhesive is provided at substantially an
- 3 entire surface of each of said tapes.

1/5

FIG. 1
(PRIOR ART)

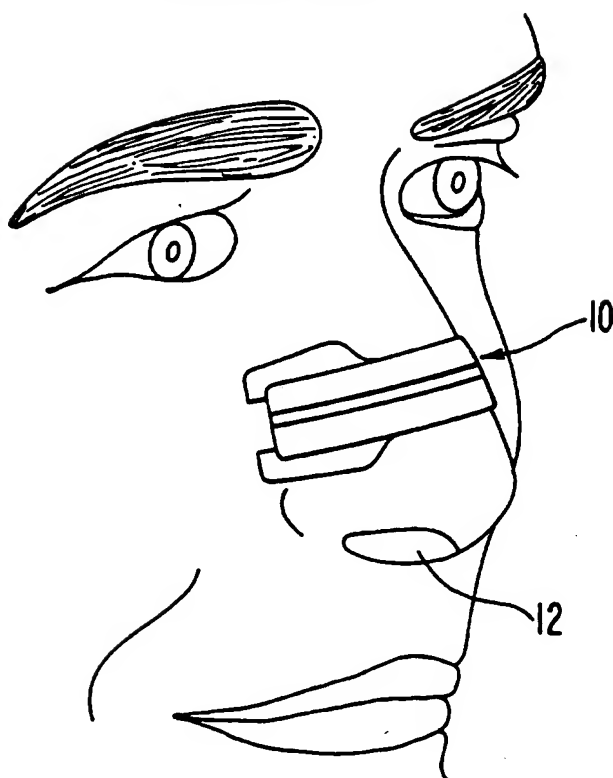


FIG. 2A

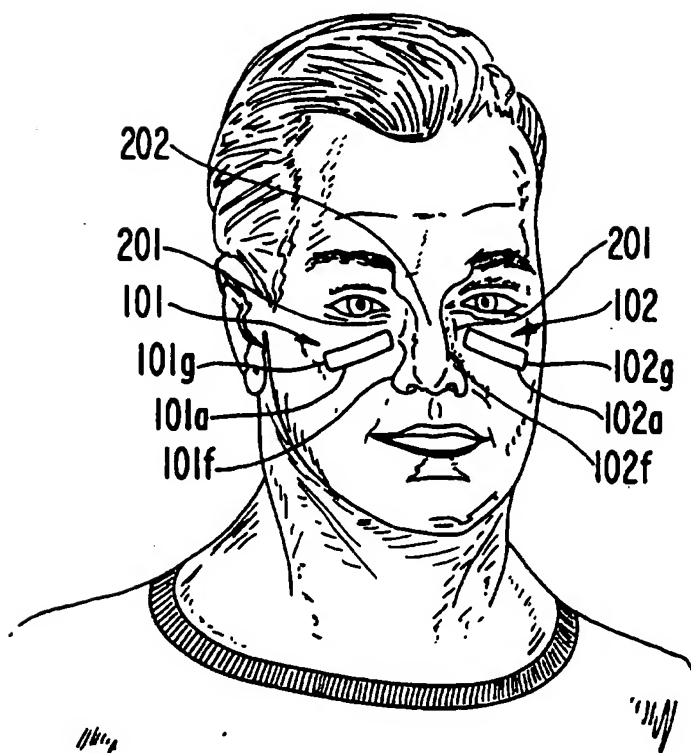


FIG. 2B

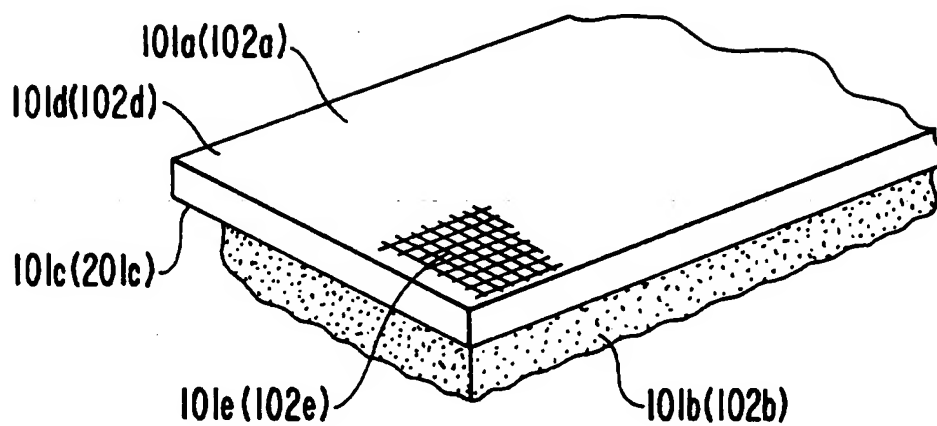


FIG. 3

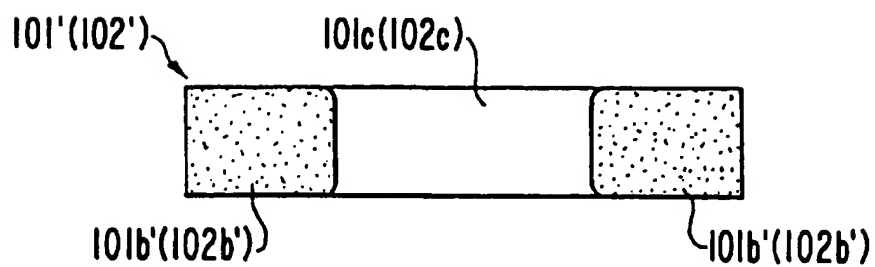


FIG. 4

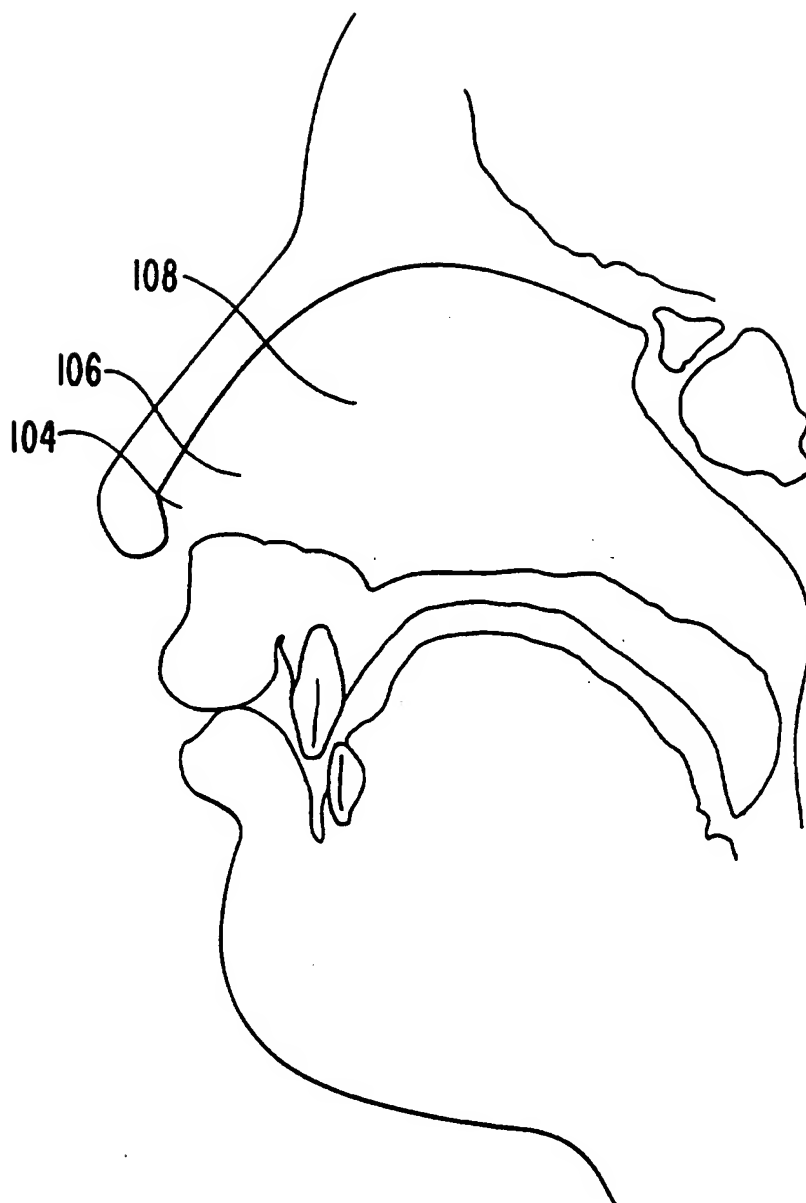
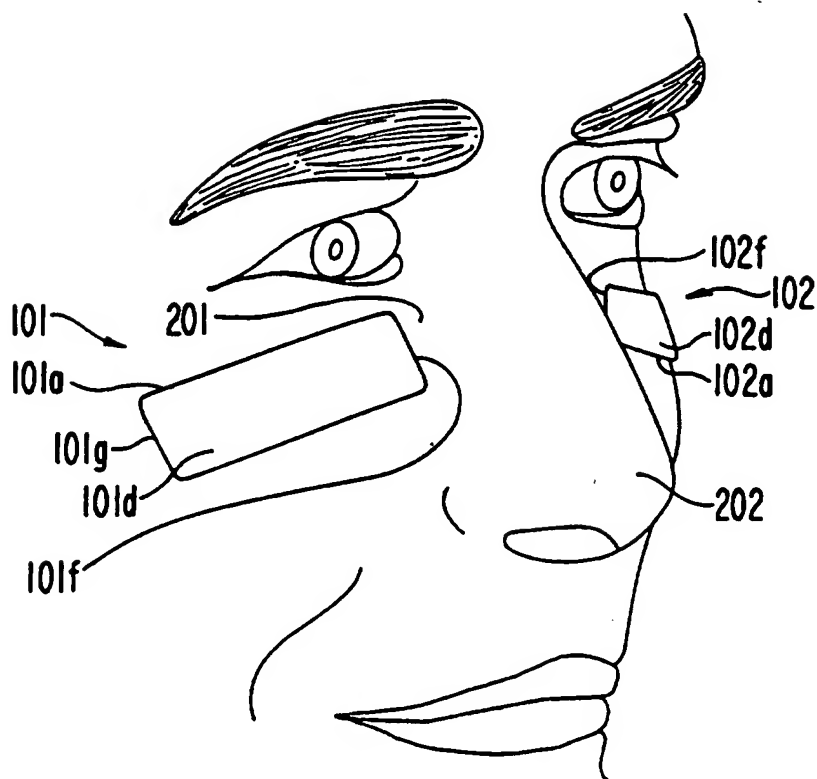


FIG. 5



INTERNATIONAL SEARCH REPORT

International application No.
PCT/US96/05458

A. CLASSIFICATION OF SUBJECT MATTER IPC(6) :A61M 15/00 US CL :Please See Extra Sheet. According to International Patent Classification (IPC) or to both national classification and IPC																				
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 128/204.12, 207.18, 848, 858, 859, 860, 861, 862, 912; 602/5, 6, 12, 14, 16, 17, 46, 47, 61, 74; 606/191, 196, 199 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)																				
C. DOCUMENTS CONSIDERED TO BE RELEVANT																				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.																		
X --- Y	US, A, 4,719,909 (MICCHIA ET AL.) 19 Januray 1988, see column 2 lines 37-41.	14, 18 ----- 1-13, 15-17 19-23																		
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Date of the actual completion of the international search 03 JULY 1996		Date of mailing of the international search report 29 JUL 1996																		
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US96/05458

A. CLASSIFICATION OF SUBJECT MATTER: US CL :

128/204.12, 207.18, 848, 858-862, 912; 602/5, 6, 12, 14, 16, 17, 46, 47, 61, 74; 606/191, 196, 199